nanofibrous matrix chondrocytes well maintained spherical morphology and formed dense layer of cartilaginous tissue. In chondrocyte cultere, cells attached selectively on nanofibers. Collagen nanofiber effectively induced chondrocyte migration on matrix and activated chondrocytes to secrete ECM proteins such as collagen type II.

[PE1-13] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Enhanced controlled transdermal release of quinupraqmine from the ethylene-vinyl acetate

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In case of oral application of quinupramine, antidepressants, it may cause adverse effects such as diarrhea, nausea due to transient high blood concentration. Ethylene vinyl acetate (EVA) which is heat-processible, flexible, inexpensive material was used for transdermal drug delivery. The purpose of this study was to develop the new transdermal delivery system of quinupramine using EVA polymer matrix that can provide sustained release and avoid the side effects. The EVA matrix containing quinupramine was prepared by solvent-evaporation method. The release profiles of drug from the EVA matrix were studied as a function of temperature, drug concentration. Some kinds of plasticizers such as the citrates, phthalates, sebacates were used for making the pore and increasing the flexibility of EVA matrix. Also we used some types of penetration enhancer to increase the flux of drug through skin like the glycols, non-ionic surfactants, fatty acids. Permeation study using mouse skin was performed at 37℃ using 0.02M-phosphate buffer as a receptor medium. In case of the plasticizers, diethyl phthalate showed the best effects. Among the enhancers used, polyoxyethylene 2-oleyl ether showed the best enhancing effect.The polyoxyethylene 2-oleyl ether as an enhancer could be used for development of quinupramine-EVA matrix.

[PE1-14] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Effect of Dry Granulation Process on Flowability of Erdosteine

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Erdosteine, an expectorant, has been known to show a very poor flowability. Furthermore, high dosing amount (300mg/cap) and bulk density make it more difficult to fill in a capsule less than No. 0 size as bulk state. We have studied the possibility of dry granulation process in purpose of getting a better flowability and manufacturing efficiency. A roller compactor was introduced for this purpose and the applicability of laboratory result into commercial scale instrument was also experimented.Roller compacting process was very favorable to obtain the granules with good flowability and improved density profiles. As a result of micromeritic analysis the compacted granules showed nearly 2 – fold higher bulk and tapped density than a drug itself, which could enable to be filled even in No. 2 capsule. In addition, compacted granules represented a significant rise of Kawagita constant b more than 3 – fold, which means much higher packing velocity, indirectly showing an improved flowability compared to bulk drug.

[PE1-15] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Development of analytical method capable of identifying the chemically or biologically oriented variants of human growth hormone by capillary electrophoresis

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The therapeutic use of protein pharmaceuticals produced by recombinant DNA technology is increasing in recent decades. In order to investigate the quality of recombinant proteins, it is important to identify and assign the impurities produced in the process of recombination or in storage conditions. Capillary Electrophoresis is

emerging technology exhibiting high sensitivity, selectivity and speed and may be most powerful tools for this application. In this study, human growth hormone (hGH) has been analyzed by various mode of capillary electrophoresis such as capillary zone electrophoresis (CZE), capillary gel electrophoresis (CGE), and capillary isoelectric focusing (cIEF) to indicate the chemically or biologically oriented variants and the degraded fragments. The two isoforms of hGH with slightly different pI value could be separated and identified by capillary electrophoretic focusing (cIEF), and the isoelectric points and the peak area ratio of the two isoform were confirmed. The impurities produced in aqueous solution during the storage period were characterized by capillary zone electrophoresis (CZE) and followed by MALDI-TOF mass spectrometry. In conclusion, the capillary electrophoretic method capable of identifying the chemically or biologically different variants of human growth hormone was developed and validated for investigation of the quality of hGH as protein pharmaceuticals.

[PE1-16] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

In Vitro Release of Acetaminophen from Mucoadhesive Microsphere Prepared by Poly(acrylic acid)/poly(vinyl pyrrolidone) Interpolymer Complex

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Mucoadhesive microsphere was prepared by interpolymer complexation of poly(acrylic acid) (PAA) with poly(vinyl pyrrolidone) (PVP) using solvent diffusion method. The loading efficiency of acetaminophen into the microsphere was 91.3 ± 6.5%. The release rate of acetaminophen from the PAA/PVP complex microspheres was slower than that from PVP microspheres at pH 2.0 and 6.8. The dissolution of microspheres made of the complex was significantly slower than those made of PVP due to H-bond between PVP and PAA. As a result, the release rate of acetaminophen from the complex microspheres was slower than that from PVP microspheres.

[PE1-17] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Modulation of P-glycoprotein Activity by Flavonoids and Organic Isothiocyanates in Human Uterine Cells.

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One of the possible mechanisms of multi-drug resistance found in cancer cells is the over-expression of P-glycoprotein (P-gp). Studies have shown that compounds found in plants including vegetables and fruits not only have anticancer activities but may also modulate P-gp activity. The effect of flavonoids and organic isothiocyanates on P-gp activity was studied in human uterine sarcoma cell lines, MES-SA (sensitive) and MES-SA/DX5 (resistant). The accumulation of daunomycin (DNM), a P-gp substrate, was approximately 10 times greater in the sensitive cell as compared to the resistant cells over the entire time course (up to 2 hrs). The positive control, verapamil increased the two hour accumulation of DNM while quercetin decreased that of DNM in the resistant cells. NITC (1-naphtyl-isothiocyanate) showed no effect on the two hour accumulation of DNM. The IC_{50} values for DNM in the resistant cells was about 20 times higher than that observed in the sensitive cells (10.1 ± 1.7μM vs. 0.58 ± 0.28 μM). Verapamil reduced the IC_{50} value for DNM whereas flavonoids (qeurcetin and fisetin) increased those for DNM in the resistant cells.

[PE1-18] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Chitosan surface grafted with fusion protein of FGF-2 and Fibronectin-FGF for tissue regeneration therapy

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